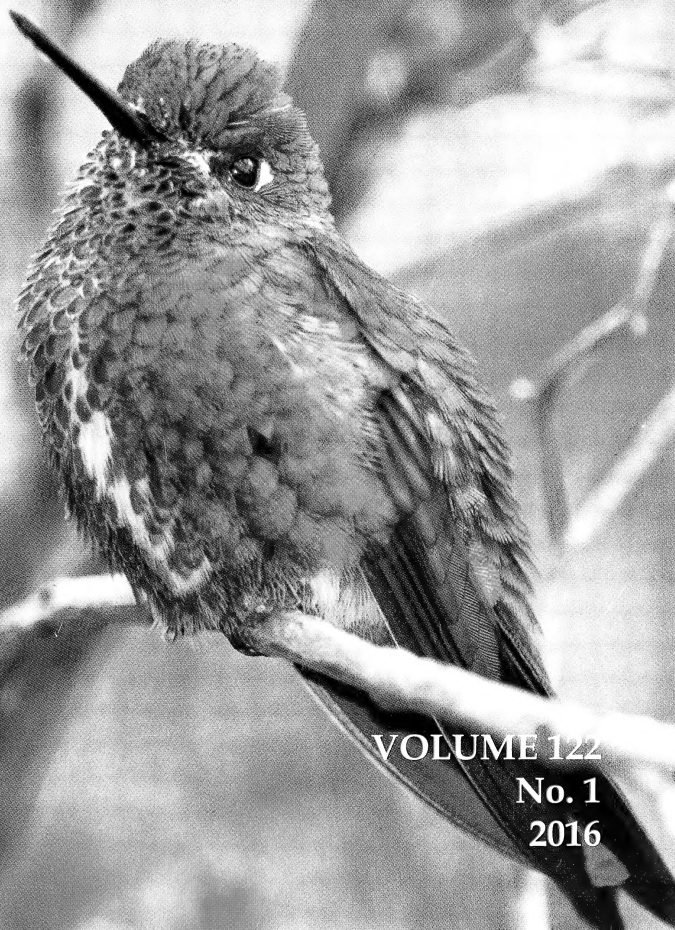


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AVICULTURAL MAGAZINE



VOLUME 122
No. 1
2016

THE AVICULTURAL SOCIETY

The Avicultural Society was founded in 1894 for the study of British and foreign birds in the wild and in captivity. The Society is international in character, having members throughout the world.

Membership subscription rates per annum for 2014: British Isles £21.00: Overseas £24.00 (plus £6.00 for airmail). (UK funds please). Full-time students £12.00, Overseas £15.00 (please state course attended). The subscription is due on **1st January of each year** and those joining the Society later in the year will receive back numbers of the current volume of the AVICULTURAL MAGAZINE.

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The AVICULTURAL MAGAZINE welcomes articles and news items from both members and non-members (no payment is made). These can be about any aspect of aviculture, conservation or natural history concerning non-domesticated bird species that are likely to be of interest to aviculturists. Articles submitted for publication should preferably not have been published elsewhere, and should ideally be written in English, though translation is possible. Scientific as well as vernacular bird names should be given, and references cited in the text should be listed at the end of the article. Material can be sent as an email attachment to editor@avisoc.co.uk and can be accepted in most common file formats. Files on disk and typed or handwritten manuscripts are also accepted. Line drawings, black and white or colour photographs can be used to illustrate articles and should be clearly captioned. Tables and graphs submitted will be used whenever possible. Graphs should ideally be accompanied by the relevant source data.

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Cover Picture: Coppery-naped Puffleg Hummingbird *Eriocnemis sappiropygia*, female
by Gregory Guida.



The Avicultural Society Garden Party

Birdworld - Farnham

Satnav -
GU10 4LD

The Rainbow Lorikeet came into aviculture in 1770 when Tupaia, a Tahitan ship-man sailed with Captain Cook to Botany Bay, captured one as part of a collection of birds destined for Joseph Banks in England. Tupaia kept the bird, but died of typhus on the way back to England. Banks gave it to Marmaduke Tunstall for his menagerie of exotic birds at Wycliffe. It lived there for some time and finally found a place in his museum.

Member park entry £9.95, Seniors
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TW9 1RB

AVICULTURAL MAGAZINE

THE JOURNAL OF THE AVICULTURAL SOCIETY

Vol. 122 - No. 1

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2016

The Avicultural Society

FOR THE STUDY OF BRITISH AND FOREIGN BIRDS
IN THE WILD AND CAPTIVITY

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AVICULTURAL MAGAZINE

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FROM THE CHAIRMAN

It was encouraging to see so many members and guests at the recent AGM at Cotswold Wildlife Park. This year the AGM weekend included a Council meeting, the AGM itself, an afternoon tour and talks programme, a dinner and a Sunday morning visit to Birdland at Bourton on the Water. The afternoon programme was organised jointly with the International Turaco Society, which also held its committee and AGM meetings on the same day. We are very grateful for the generous hospitality of our hosts at Cotswold Wildlife Park. Our collaboration with ITS was very successful, and we plan to hold joint AGM events at CWP again in 2017, with a Sunday visit to another local collection. Below is a summary of the Society's activities over the last year, based on a report which I presented to the meeting.

In the year since our last AGM at Slimbridge, the Society has held two summer meetings, at Cotswold Wildlife Park to hear Simon Matthews talk about his work with Birds of Paradise at Alwabra and at Graham Lee's collection in Essex, where a small group enjoyed an excellent finch collection and barbeque. In the autumn we had an interesting visit to Banham Zoo, with the bonus of a look at Roger Cattermole's collection nearby. We have set up an events group, comprising Chris Kent, Rosemary Wiseman and Luke Forster, who between them organised all these events and the AGM weekend. Thanks to Daan Witlox and Mike Curzon we also ran a hugely interesting and successful trip to the Netherlands and Belgium last September. Chris Green, with Mike's help, has planned a trip to Ireland in September this year which will include visits to both public and private collections.

The Society also attended the National Exhibition last October and the Stafford Spring Show in March. These events are always a good opportunity to catch up with members, collect subscriptions, network with other organisations, fly the flag for the society and recruit new members. Graham Thurlow organises our presence at these events and Paul Convy and Nick Curzon among others regularly provide vital help on the stand.

Changes made to the production of the magazine have as yet been only partially successful in bringing publication back on schedule, but we have in the last year published seven magazines (not including this issue), an indication of the work that Martin Greene puts in as editor (and Kate Atwell and Paul Convy in getting the magazine out to you). These issues have included the index to the first 120 years of the Avicultural Magazine, quite a milestone. I hope you find this as useful as I do – I refer to it frequently, and it has proved a great help in preparing

material for current magazines, as well as for researching species and topics of personal interest. It may also throw up some gaps in your magazine collection, in which case we can supply most backnumbers at a very reasonable price. Please contact Kate, or Mike Curzon directly.

The Raymond Sawyer Scholarship was awarded for the second time, with a much better response than in its first year. Rosemary Drew, who was selected from a very strong field of 19 candidates, was funded to attend the biennial Conservation Breeding and Husbandry of Birds course at the Durrell Conservation Academy in Jersey. Rosemary was one of our AGM speakers, and was able to tell us something about her experiences in a range of bird collections, and how the scholarship had helped her to develop her knowledge and skills. We hope to include material from Rosemary and our other speakers – Simon Tamungang, Jade Stott and Chris Green – in future magazines. This year's scholarship will be launched very shortly, in partnership with Cage & Aviary Birds. I am grateful to Laura Gardner and Philip Schofield for acting as the Society's representatives on the selection panel.

Apart from cooperation on the scholarship, Cage & Aviary Birds has given us good publicity throughout the year – at one point we had three half-page colour spreads in four weeks. This is testament not only to our good relationship, but also to Chris Kent's work as publicity officer. We continue to affiliate to the National Council for Aviculture through the Foreign Bird Federation. The value of this has been demonstrated by the work that SUN, the Sustainable Users Network, which we support through the NCA, has done in monitoring and where necessary objecting to measures under consideration in the EC and DEFRA which affect birdkeeping. Following up input from SUN, the Society has written to DEFRA with concerns on the way that proposed EC controls on Introduced Alien Species were being introduced. While the reply was less than encouraging, because of pressure by SUN and others the adoption of the regulation as it affects aviculturists has been postponed, and we will be contacting DEFRA again to express our continuing concerns.

I said in my response to the member's questionnaire that we would be focussing on improving the website this year, and we have started work on that. Our webmaster Mark Sproule joined the Council meeting by Skype from Canada – as did Simon Matthews from Hawaii - to discuss ideas for developing the site, which you should see put into action over the coming months. We will also continue to develop our use of facebook.

We hope to stage an exhibition of Malcolm Ellis paintings and drawings later this year through the kindness of Richard Meyer. The pictures come from the collection of the late Jack Brown of Padstow Bird Gardens, and proceeds from sales will go to the Avicultural Society and macaw conservation. Venue and dates to be confirmed.

Dates of forthcoming events are:

Garden Party – Birdworld, Farnham – Sun June 19th

Autumn Social Meeting – Bristol Zoo - Sat Sept 10th

International Centre for Birds of Prey, Newent – Sun Sept 11th

PSUK 50th Anniversary Seminar - Chester Zoo - Sat & Sun Sept 17th-18th

Trip to Ireland – Fri Sept 23rd – Mon Sept 26th

National Exhibition – Stafford – Sun Oct 9th

You will receive further details of these events and dates of others as these are finalised.

Nigel Hewston

HUMMINGBIRDS

By Nigel Hewston

Our request for articles on hummingbirds to accompany the cover picture has yet to bear fruit, so we have included two previously published articles, which show two aspects of hummingbird keeping almost 50 years ago, when a wide range of species was imported regularly. Tony Mobbs was an accomplished aviculturist who wrote extensively on hummingbirds, and was later well-known as a successful breeder of and author on Australian finches, as well as a seller of avicultural and ornithological books. His article on pufflegs from 1974 gives a glimpse into the world of the hummingbird enthusiasts who tried to establish a variety of difficult species, often with very limited success. While we might admire his dedication and meticulous observation, combined with a willingness to publish failures as well as successes, when weighing the successes against the failures it is difficult not to conclude that the end of the trade in wild-caught hummingbirds was a very good thing.

Mrs Scamell also wrote prolifically for the Avicultural Magazine, usually detailed accounts of her successes and failures with breeding sunbirds, hummingbirds, bluebirds and other softbills, at a time when many keepers were content to keep these kinds of birds for exhibition or ornament. Her breeding of the Sparkling Violetear in 1967 was achieved in what those running the few facilities breeding hummingbirds today would consider spartan conditions, but clearly demonstrates what can be achieved by aviculturists who know their birds and are prepared to adapt their husbandry from day to day. This species also bred successfully in the tropical house at WWT Slimbridge, with young reared fairly regularly through the 1980s and early 90s. The Green Violetear *Colibri thalassinus* also bred there in the 1970s, when Dr Pierre Lamoure also bred the Sparkling in France, and Sparkling x Green, Green x Brown *C. delphinae* and Sparkling x Brown hybrids were reared in several collections.

Perhaps if all the skilled hummingbird keepers had concentrated on violetears, rather than, inevitably, being distracted by the other species on offer, these birds would be well-established in aviculture today. With modern facilities and diets, it is almost certain that, if a properly conducted importation could be organised, a captive population of one of the *Colibri* species could be established. Hindsight and wishful thinking!

NEXT ISSUE

Our next cover features the Malachite Kingfisher *Alcedo cristata*, so we would particularly welcome articles or notes on kingfishers. It is not too late to submit articles on hummingbirds, and never too late or, more to the point, too soon to send your articles or short notes on any species or families of birds, or general reports on your collection or those you have visited.

INDEX

We know that the index, useful as it is and despite the huge amount of work put into it, is not quite perfect. If you have found any errors, we would be very grateful if you could inform us of these so that they can be corrected before we put the index online. We will also then be able to publish a list of errata.

BREEDING THE VIOLET-EARED HUMMINGBIRD *Colibri coruscans*

By Mrs K M Scamell (Newdigate, Surrey)

In my notes on "Near misses with Violet-eared Hummingbirds" (AVICULTURAL MAGAZINE, Nov-Dec 1966) I mentioned on p166 that I was thinking of putting the cock in the adjacent flight-shelter to that occupied by the hen and keep them separate for the winter and then try and pair them up again in the spring. This was done but as was the case last year, the birds in their respective side by side aviaries, came into breeding condition late in the very mild winter which we had.

On 28th February 1967 there were signs of nest-building five feet high on the netting of the hen's shelter facing the pop-hole to the flight. By the next day a cascade of cotton wool, kapok and grasses was falling to the floor as fast as the hen put it up. She was in a great hurry and trying to string up her nest on the netting itself, an almost impossible task, so little progress was made. I then opened a division between the two shelters and thus allowed the cock and hen freedom to enter each other's shelters and flights. On 5th March it was obvious that she would never complete the nest without help. She seemed exhausted and the floor was littered with teased-out nesting material which had fallen. The cock was again separated and knowing that nothing would make the hen change her mind on the choice of nesting site, my husband and I fitted a small cedar support under the nesting material still hanging from the netting. By the next day there were signs that she was attaching her nest to the netting and platform in much the same way that she did last year when she was in the cock's aviary. On that occasion she rested the nest on the aviary framing – this time she was 12 inches above it.

Progress was slow, but the hen seemed stronger so on 8th March we again removed the division and let the cock enter her aviary. Two more days went by and the nest was still unfinished. On the 10th we again closed the division and re-opened it on the 12th and by 15th March the nest appeared to be complete. The next day she spent most of the day perching low down in the flight which was most unusual. She did not look too fit so once again the division was shut and the two birds separated! The next day there was an egg in the nest so the division was opened once more. At 6pm she was incubating with the male hovering quietly in the same shelter – the most peaceful scene we had witnessed for many days! It was not until the morning of 20th March that she laid her second egg when we again closed the division and shut the cock in his own aviary.

During the next three days, nectar consumption in the hen's aviary remained high, a full tube (0.7 fl oz) each day. It seemed that the cock was distracting her from her incubation duties with his close presence and continuous calling so, on 24th March, we caught him up and removed him to another aviary about 30 feet away. He started moulting shortly afterwards and ceased to call. Throughout the incubation period the pop-hole door was left open in the daytime and the hen was free to exercise in the flight. She seemed to spend some time there in the late

afternoons. On 28th March one egg had disappeared, but the remaining egg had darkened and seemed fertile.

On 4th April at 8am when the pop-hole door was opened the hen flew straight out into the flight. It was an opportunity for my husband and me to see if the egg had hatched. On this occasion we saw an almost black chick wriggling in the bottom half of the shell – the upper half was missing possibly just taken into the flight by the hen. We did not linger but it was a sight not easily forgotten. This was the 16th day since the second egg was laid so the first egg must have been infertile or chilled during the three days between the laying of the two eggs, when she sat only occasionally. There were plenty of fruit-flies in the shelter but we added 20lb of bananas to a large box of over-ripe fruit which had been in the shelter for over a year. It had supplied fruit-flies throughout the winter as it was near an oil-filled electric radiator and thus got sufficient local heat. Now to make sure of a more rapid production of these flies we wrapped the box around with horticultural heating tape as last year and this increased the local heat. The problem was to supply local heat to the fruit-fly culture and at the same time to keep the bird-room temperature down as I was quite sure there would be no hope of rearing the young bird if the room got too warm. We kept the fruit-box covered up and removed the covers each time either of us visited this bird-room. There were other birds in the same room, our old Rothschild's Grackles on two eggs, a Paradise Flycatcher and pairs of Bulbuls and Grey-headed Thrushes and some odd softbills. As last year, all the birds in cages were quietly removed and placed in their summer aviaries leaving the Grackles, Bulbuls and the Paradise Flycatcher, all of which had access to outside flights.

For the next few days everything proceeded normally - we opened the pop-hole door each day regardless of the weather (the nest was only about three feet from the pop-hole) and we had some very chilly days with maximums around 45°F. With such temperatures in the shelter all day and night we were tempted to raise the thermostat, but decided against altering anything as the chick was very active and growing fast. Nectar consumption was higher than last year. On 11th April, when the bird was seven days old it was as large as last year's chicks at thirteen to fourteen days when they died. This we knew as we had preserved last year's chicks in spirit and were able to make a rough comparison for size. It was a delight to see the young bird throw its head up over the top of the nest – at times we thought it was going to fall out. When feeding, the hen always alights on the edge of the nest before thrusting its beak down the chick's throat.

Diary entries for the next few days read:

“12th and 13th April. Cold days with bitter winds. Maximum temperatures still around 45 F. Young bird almost stands up to gape. Some quills appearing on the back and wings.

15th April. Weather fine and sunny, maximum temp 60-62°F. Young hummer growing feathers. In the late afternoon it was lying partly on its side with swollen, dark crop clearly visible. Jet black excreta patches which surround the nest show that ample fruit-flies are available.”

I should mention that this particular birdroom is ventilated through the door (when open) and the five pop-holes leading to the five outdoor flights. Twelve fixed roof lights and two fixed windows let in light and sunshine, but on a sunny day it can get very hot inside even with the door open. We painted six of the roof lights white but on 17th April following a cold night the temperature inside the shelter was approaching 80°F at 2pm. The young bird looked distressed and I thought we were going to lose it. The other six roof lights were painted out and the temperature quickly dropped. The room was now very gloomy as we also shut the door to keep out the sun. Artificial lighting was necessary in the daytime and from 5am and we had no further cause to worry over excessive heat.

The next day, 18th April, was much cooler – a big drop in temperature and sunshine. The eyes of the chick were now quite noticeable and it was sprouting feathers all over – it was very active. All went well for some days and on 22nd April I noticed that almost two tubes of nectar were consumed in the twenty-four hours by the hen and chick as against one and a half tubes by the cock. The hen rarely brooded in the daytime. The weather continued cold and often wet with maximum temperatures ranging between 45 and 50°F. By 26th April the young bird was able to move around its nest and flap its long quilly wings. In the artificial light it appeared quite dark in colour with a beak $\frac{3}{4}$ inch long, black except for a light coloured base. The hen continued to brood at night. On the 28th it was noticeable that complete feathering had continued down the head and back and wings, the latter almost to the tips which were now finishing. By 30th April, when the bird was twenty-seven days old, feathering was complete except for one primary feather on each wing. The tail was about $\frac{1}{2}$ inch long.

I was getting quite concerned at the long time the bird was in the nest and wondered if it would ever fly! All my reference books stressed, however, that not only was the incubation period remarkably long and variable, ie between fourteen and nineteen days, but as the birds must fly strongly from the moment they leave the nest, the rearing period could be from nineteen to thirty days.

2nd May was another cold day with sleet, rain, little sunshine and a maximum temperature of 48°F. the young bird was moving around the nest and changing its position every few minutes and we felt that it would not be long now before it was airborne! The hen seemed to spend most of the day in the flight and as the afternoon went by, it seemed to us that something was wrong. Nectar consumption was very low, about half normal for the time of day. The young bird had become inactive and seemed soft and very flat in the nest. In the evening the mother was brooding the young bird much earlier than usual, sitting crosswise across its back. At 7:45pm it was very weak and opening its beak at intervals. The hen came off for a moment to feed and we had a closer look. The young bird was torpid, or almost so, and though I tried to move it to see if it could be hand fed, its feet were firmly gripping the nesting material, so we left it where it was. It made the faint squeak that torpid hummers make if one tries to move them in that condition. The hen brooded again almost at once, but at 8:25pm when we switched the light off, nectar consumption for the birds was three-fifths of a tube as against nine-tenths of a tube by the cock. Torpidity in hummers is always alarming to witness, but in our experience and from all accounts is natural in hummers under certain conditions. Our

longest lived hummer, a Greenfly *Chlorostilbon gibsoni* went torpid most nights for nearly seven years. What worried us, however, was the low nectar consumption and the possibility that when the young bird came round it might be too weak to gape for food.

I did not expect the young bird to be alive when I opened the aviary the next morning but to my astonishment and relief it was sitting up as perky as ever! Several times during the day I observed it fluttering around the nest and exercising its wings but, as far as I could see, it had not left the nest. The weather was still cold so in the afternoon, for the first time I shut the hen in the shelter with the young bird to make sure that the latter did not become chilled between feeds as I think was the case the previous day. When the bird was younger it was sheltered from winds by the sides of the nest but now it was so large that most of its body was visible above the nest and, facing the pop-hole as it did, there was no protection from the cold winds. I was glad I had shut the hen inside because that night there was a moderate frost of at least 7 degrees. The nectar in some of the sunbirds' aviaries was frozen solid as was the water in many of the aviaries. Our azaleas and many of the fruit trees caught this frost and were spoilt for flowering or fruit this year.

On 4th May it rained all day. At 8am the young hummingbird was sitting in the nest – at 10am when fresh nectar was brought in, it was sitting on a nearby perch side by side with its mother! We only let the hen in the flight for a few short periods during the day in case the young bird got out and possibly drowned. Several times we saw it perched quite still, with its head inclined towards its parent. At 3:30pm it was back on the nest. It had flown at thirty-one days old.

My diary for the next few days reads:

“5th May. Young hummer on the nest at 8am, perching at 10am then flew strongly round the shelter returning to the same perch. In the nest at 1pm and 2pm, off about 3pm until about 6pm then on the nest again. Occasionally let the hen in the flight.

6th May. A nice day at long last. No rain and temp. about 55°F with sunshine. Let the hen in the flight at 10am, the young hummer followed her for the first time. We kept a very careful eye on it, but very soon it went in and out of the shelter at will until 5pm when it returned to its nest and stayed there. The flight of the bird has to be seen to be believed, no faltering or hesitation and with a perfect sense of direction. The mother got excited at times. There are a few blue feathers developing on the chest and also two central blue tail feathers, otherwise in sunlight it is dull blue-green generally, without metallic effect. Nectar consumption in the twenty-four hours: cock one and two-fifths tube, hen and young bird one and nine-tenths tube.

7th, 8th and 9th May. Managed to get a few snaps and a few feet of 8mm film showing the hen feeding the young bird. This always occurs on a branch – the birds perching side by side with the young bird opening its beak until the mother plunges its own beak down the bird's throat. Feeding took place at roughly half-hour intervals, but as we were watching it may well be that the demands to be fed would have been satisfied earlier in our absence. The mother chased her offspring inside from time to time and by 9th May more colour was noticeable. It still retired

to its nest at dusk, the hen perching a few inches away. She no longer broods.

10th May. We saw the young bird feed itself from a tube poked through the netting. It was a short drink taken on the wing but on other occasions it clung to the netting to drink."

It was very hot on 11th May, about 75°F. The mother was observed to feed the young bird from time to time and it was also seen feeding itself. The tail and shoulders now show iridescence. It revelled in the thundery rains of the next day and at 8pm was back on the nest with the mother perching close by as usual. 13th May opened dull and then warm and sunny. From 2:15pm to 2:45pm we both tried to film and snap the feeding operation, but not once in that time did its parent try to feed it. She seemed to drive it from the nectar tube in the flight every time the young bird took a short sip on the wing; they also sparred a little. Several non-birdy visitors arrived unexpectedly and our attention was diverted for some considerable time. At 7:20pm we saw the young bird clinging to the netting in the shelter with a very excited mother charging around uttering angry noises. After some difficulty we separated the two and with the hen shut in the shelter netted a very frightened young bird in the flight and caged it in the lounge. It was midnight before we were satisfied that the bird could find the nectar and had settled down in the confines of a cage after the freedom of a comparatively large aviary. It was a near thing and I am quite sure the mother would have killed her youngster by the morning. We have seen this thing happen so often, some birds such as Diamond Doves and Rothschild's Grackles will kill their offspring unless they are removed in time, others will go on feeding them for weeks. It depends a lot on whether the parents want to go to nest again.

The next day, Sunday 14th May, we transferred the young hummer to an empty compartment in our conservatory where we keep about twenty hummers. It soon found the nectar and drank a full tube in the twenty-four hours. The following day we opened the pop-hole in the compartment and let the bird into a planted flight measuring 10 by 4 by 7 feet 6 inches high which at the time of writing, 12th June, it has occupied alone. We have so far shut it into the shelter each night, but there is really no need to do so. It is hardy and powerful on the wing and enjoys the rain regardless of the downpour and we have had many almost tropical storms during May.

On 14th May we again returned the cock to the hen's aviary and on 19th May she laid another egg in her old nest which she had cleaned up and rebuilt. On 22nd May she laid a second egg about 3:30pm. We shut the division between the two shelters and the short honeymoon was over! We then removed the male to his remote aviary and the hen commenced incubating. Somehow, I did not think anything would materialise. She has behaved very strangely. First she located the eggs as far apart as possible, about 1½ inches from each other. Then she sat with her beak protruding through the netting and looked most uncomfortable. On 24th May one egg disappeared only to reappear two days later. On 28th May no eggs were visible and yet she sat all day! A careful look when she was off the nest showed she had buried the eggs beneath the nesting material and the nest itself was twice as thick as it was a few days earlier. She finally gave up incubation on 6th June and we again returned the cock who has completed his moult and is now in wonderful condition and feather. The birds are not shut in at night and

I thought I saw a glimpse of her through the pop-hole at dusk this evening, sitting once more on her rebuilt nest. I have still hopes of another clutch of eggs this year anyway, provided she does not go into moult. The young bird is developing more iridescence, but I do not think this will be complete until it has had its first moult. As regards sex, it is possible it is a female as a bachelor hummer in the next aviary is paying it a lot of attention! The nectar recipe is exactly the same as the one I used last year, ie Gevral-Protein-Vitamin food plus sugar and water in the proportions I mentioned in my previous notes.

This article was first published in the Avicultural Magazine Vol 73 no.4 109-115, July-August 1967.

NOTES ON THE PUFF-LEGGED HUMMINGBIRDS *Eriocnemis*

By A J Mobbs (Walsall, Staffordshire)

Of the ten species which form this genus, only three appear to be brought into Britain in any numbers, and even these cannot be classed as regular imports. All the *Eriocnemis* are extremely difficult to establish and cannot therefore be recommended to any but the more experienced hummingbird enthusiasts.

I would advise anyone purchasing an *Eriocnemis* species to cage the bird for at least three to four weeks, after which, if the bird is in good health, it could be released into a flight or aviary with other hummingbirds. The Glowing Puffleg *E. vestitus* is approximately 4 inches overall length; both sexes have extremely large and showy leg-puffs, which are white. The male is shining dark green above turning to glittering green on the rump and upper tail-coverts. Throat patch is glittering purple surrounded by shining green; lower breast and belly is glittering emerald green and the under tail-coverts are glittering purple. The tail, which is forked, is dark steel blue.

Females have upperparts shining golden-green, glittering on the rump. Throat patch and under tail-coverts are glittering blue; sides of neck and breast buff interspersed with green, remainder of underparts whitish interspersed with glittering golden-green.

Of the three species which are imported, the Glowing appears to be the most difficult to establish, and as far as I can ascertain, no aviculturist has successfully moulted this species. In England both R. J. Elgar (Manchester) and I have kept a specimen alive for six months. Elgar's bird was a female, mine a male. I heard of a Glowing (sex unknown) surviving for eight months in a collection on the Continent, but have been unable to acquire details.

The majority of Glowing Pufflegs which enter Britain are dead within a matter of days, a large percentage dying from enteritis due to their inability to accept a captive diet.

In 1970, Don Bleitz (California) had a paper published relating how he had successfully established certain species of hummingbirds considered to be difficult, by adding plant pollen to their diet. M. W. Clifford (West Bromwich) and I purchased a small amount of this pollen from Bleitz and when the next consignment arrived containing *Eriocnemis* species, Clifford very kindly gave me a *vestitus* and a *luciani*; both were males. The *vestitus* was unable to fly more than a few feet at a time, due to the three outer primaries of one wing being broken off near the base. Because of this, the bird had to be housed permanently in a cage. However, the bird did was able to move about surprisingly well and managed to reach its nectar and take a bath whenever it wished; also it was seen to take fruit flies, albeit rather awkwardly.

This bird died while I was away on holiday and as I returned home the day after its death I was able to inspect the body while it was still fresh. I could find no reason for the bird's sudden

demise; it was well fleshed and appeared to be free from disease. I have a feeling the bird died because of its inability to fly correctly. Hummingbirds rely on their powers of flight more so than most species and if for some reason they are unable to fly correctly, many of them appear to lose the will to live. Since losing the Glowing, I have had one other, a male. This bird did not have the vitality of my first bird and within ten days had died from enteritis.

I believe that plant pollen could be of help when attempting to establish such difficult species as the Glowing Puffleg, however, the bird would need to be reasonably healthy at the time of purchase; otherwise there is little hope of success.

Unfortunately, plant pollen granules cannot at the time of writing, be purchased direct in Britain and I have to obtain my supply from a firm in France. For anyone wishing to add plant pollen to their birds' diet, the following instructions should be adhered to. Into a small clean jar, preferably with an airtight lid, place one (5ml) teaspoonful of pollen granules and two teaspoonfuls of cane sugar; add approximately four ounces of warm water, place the lid on the jar and shake thoroughly until the pollen and sugar are dissolved.

The mixture should be made up last thing at night for the morning feed and at lunchtime for the evening feed. It should be left at room temperature, and not placed in a refrigerator.

I would like to point out that the plant pollen referred to is the natural one sold in granule form. Pollenflor (and other such products) which can be purchased from most health stores in Britain, have under analysis been proven to be of no benefit to birds.

The Coppery-bellied Puffleg *E. cupreiventris* is approximately 3¾ inches overall length. Upperparts are shining golden green; throat and breast glittering emerald green, turning to glittering coppery green on the belly. Under tail-coverts are glittering purple and the forked tail is blue-black; leg-puffs white. Sexes are similar.

This species had just begun to appear in shipments when the South American countries started to restrict the exportation of birds. As with the remainder of the genus, *cupreiventris* has proved difficult to establish.

The late Guy Detry (Wavre, Belgium) had a Coppery-bellied for almost three months and Karl-L. Schuchmann (Weiterstadt, West Germany) had a specimen which he imported himself, for approximately five months. Both birds died from enteritis.

It appears the habits of the Coppery-bellied are very much like those of the other puff-legged species. The birds owned by Detry and Schuchmann were extremely fond of bathing; also they were seen to spend much of their time resting on one foot. The Coppery-bellied can be rather belligerent, but as with the Sapphire-vented, much of this appears to be bluff.

The Sapphire-vented Puffleg *E. luciani* is approximately 5¼ inches overall length. Upperparts are shining coppery green; underparts glittering emerald green. Under tail-coverts glittering

purple and the forecrown shining blue. The long deeply forked tail is black; downy leg-puffs white. Sexes are similar.

The Sapphire-vented is brought in less frequently than the Glowing. It is a most attractive species and were it an easy bird to establish, would without doubt be a great favourite among hummingbird enthusiasts.

I purchased a male soon after becoming interested in hummingbirds. At the time I was unaware how difficult the *Eriocnemis* can be, and was most upset when the bird died after being with me for only a matter of days.

Since then I have successfully established a male which was given to me by M. W. Clifford on 16th April 1971. This bird was caged for the first three weeks, after which it was released into my communal hummingbird flight where it remained until its death 2½ years later, surely a longevity record for this species.

As with all the *Eriocnemis*, the Sapphire-vented was extremely fond of bathing; it also drank a certain amount of water every day. It is therefore essential for the well-being of these birds, that clean water is available at all times.

The Sapphire-vented can prove to be extremely aggressive towards other hummingbirds and anyone fortunate enough to establish one, should be wary when introducing it into a communal flight. Most of the aggression shown by this species is bluff and should another hummingbird have nerve enough to stand up to the puffleg, it will usually be left alone. However, a bird which shows fear is usually harassed unmercifully.

The dividing line between mating display and aggression in certain species of hummingbirds is very thin indeed. In fact there is a possibility that many mating displays begin as aggression, turning to actual mating display only when a submissive female is found. As can be expected, the white thigh feathering is much in evidence during the display of puff-legged species. The Sapphire-vented would hover in an upright position with the legs held out away from the body, thus displaying the leg-puffs to advantage. While remaining in this position, the puffleg would then fly forward toward the bird at which the display was being directed, stopping only a matter of inches away. If this was not enough to persuade the bird into leaving the perch, the puffleg would fly backwards, still remaining in an upright position, and then fly toward the perching bird once more. The forward movement is extremely rapid and it always surprised me that the puffleg was able to stop so abruptly. The backward movement was more leisurely and an observer is able to see this particular action most clearly. If the bird at which the display was being directed became unnerved and left its perch, the puffleg would give chase. Should the bird which was being chased turn on the puffleg at this stage, the latter would appear to go berserk and would repeat the movements already described, again and again until the unfortunate "victim" was forced almost to the ground. Occasionally a very timid hummingbird would take refuge in a plant; should this occur, the Sapphire-vented would direct its display toward the plant in an attempt to drive the bird out. It is somewhat difficult to describe in

words just how remarkable is the display of the Sapphire-vented Puffleg. As I have witnessed it many times, it has obviously lost some of its appeal; however, someone seeing it for the first time could not help being fascinated.

None of the *Eriocnemis* appears to have a song, and other than a weak alarm call (twit, twit, twit) these birds are silent. The Sapphire-vented makes a cracking sound prior to the forward thrust during its display, but I presume this is made by the wings.

I feel certain the problems encountered with many of the hummingbird species considered to be difficult are dietary ones. After having success with the Sapphire-vented and partial success with Glowing, I had begun to hope that the addition of plant pollen to the diet would prove to be the answer to all our problems. However, much as I believe pollen to be beneficial to hummingbirds, it is most certainly not the complete answer. It is essential therefore if more is to be learnt regarding these birds, that anyone fortunate enough to have even a small amount of success with a known difficult species, makes known his or her findings. The question is not why do such birds die soon after capture, but why do the occasional ones survive long enough to become established.

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BREEDING OF BEARDED REEDLINGS *Panurus biarmicus* AT NEWQUAY ZOO

By Jenny Lea (jenny.lea@newquayzoo.org.uk)

Bearded Reedlings *Panurus biarmicus* also known as the Bearded Tit are wetland specialists native to parts of Europe and Asia. In the UK they are found in the South and East with smaller populations in Ireland and Lancashire. Their taxonomy has been a subject of debate, originally being placed in the family *Paridae* with all true tits. They have now been moved to the parrotbill family, *Paradoxornithidae*, with some ornithologists believing that, in fact, they are a unique songbird and belong to a family of their own.



Male Bearded Reedling at Newquay Zoo

The Bearded Reedlings at Newquay Zoo were first bred in 2014. In the spring of 2013, two males of unknown age were acquired from another collection and, after they had become successfully acclimatized to the new environment, two young females were added.

The Bearded Reedling aviary measures 3.5m by 3.5m with a slanting roof approximately 2m high at the highest point. Zoo mesh is used on the roof as well as on three of the four sides, with glass on the fourth side which is on full view to the public. Corrugated Perspex partially covers the roof to provide some shelter; however no heating is used. Initial concerns that the use of glass on one side of the aviary might lead to birds flying into it have not been realised. Perhaps the precaution of smearing cream cleaner onto the glass to make it visible at the time of introduction was effective. The aviary also contained Natterjack Toads *Epidalea calamita*, formerly *Bufo calamita*, a shallow pond and several plant species, including *Miscanthus sinensis*, *Ulex europaeus*, *Iris pseudacorus*, *Phragmites*, *Erica carnea*, as well as a number of self-seeded weeds as ground cover.



Bearded Reedling Aviary

The Bearded Reedlings are fed a mixture of equal parts Witte Molen softbill food with fruit and Witte Molen Universal softbill food with shrimp, to which is added finely grated carrot and boiled egg. A small amount of Yellux is added which helps to enhance yellow colouration through strengthening the birds' immune system. A sprinkle of Nutribal is also added which is a supplement containing various vitamins and minerals beneficial to the birds. There is a small opening at the back of the aviary to allow access to the food bowl with minimal disturbance. In addition to the insectivorous mix, we provided a small amount of mini mealworms which are scattered around the aviary each morning and afternoon. Water is constantly available via the pond which is replenished with rainwater. In the wild, Bearded Reedlings experience a dramatic change of diet over the year. In the spring and summer months they are primarily insectivorous, whilst during the colder months this changes and their diet becomes predominantly made up of seeds from various grasses. Interestingly, their digestive system alters to accommodate this change. For the birds at the zoo a change of diet was attempted during the winter months, with seed being made readily available. However the birds chose to continue to remain insectivorous. Consequently, it is now decided that the same insectivorous diet should be offered all year round, with millet sprays suspended on perching made available through the colder months which the Reedlings appear to appreciate.

Around the end of March and the beginning of April the four Reedlings began to behave like two pairs; this involved allopreening in addition to the males chasing and displaying to the females. Although a number of artificial nest boxes were placed in the aviary, the first pair built their own nest, using dried grass and coconut fibre, about 15-20cm off the ground positioned between the reeds and well hidden at the back of the enclosure. On close inspection the nest was found to be a cup-shaped creation with a coconut fibre lining. It was quite easy to record the beginning of incubation as both the male and female took relatively equal turns on the nest and so only one of the pair was visible off

the nest at any time. The changeover for sitting duty occurred quickly and numerous changes took place throughout the day. On the 13th April, after around 14 days incubation, the pair's behaviour changed noticeably, and the nest was left unoccupied on a number of occasions. Believing this might indicate the eggs had hatched, we entered the aviary for the first time to inspect the nest. Four eggs had been laid but none had yet hatched or appeared to have started to hatch. The following day a surprisingly dark chick with colourful mouth markings (noticeable on gaping), appeared among the eggs. Subsequently, staff offered regular chick feeds every two hours which were gratefully received by the parents. These feeds consisted of newly-shredded (so as to be easily digestible for the chicks) white mini mealworms and small wax moth larvae. Avimix was sprinkled on the live food before being placed in the aviary. These chick feeds were offered in a clear plastic bird feeder that was attached to the glass on the side of the aviary. This feeder was covered to prevent the insects getting wet due to rain.



Eggs and chicks just hatched and chick begging showing palate markings

On the 15th April a second chick arrived, but the remaining two eggs failed to hatch and ultimately turned out to be infertile. Since Bearded Reedlings are a native species, the chicks had to be close ringed using size E rings sourced from the British Bird Council website (<http://www.britishbirdcouncil.com/>). The optimum time to ring appeared to be at four days of age although initially it was attempted to ring them at five days; it proved difficult due to the chicks already being too large. To minimise disruption to the pair while ringing the chicks, nesting material was scattered around the entrance of the nest after inspection, to serve as a distraction. Consequently, the pair was more interested in clearing the nest entrance than anything else. A chick feed was also offered straight after ringing the chicks.



Chick aged five days taken just after being ringed

The pair continued to be steady parents and chick feeds were continued. Gradually, shredded standard sized mealworms along with larger waxworms were added and eventually, as the chicks approached fledging, brown mini mealworms were introduced. There were concerns, as the two chicks began to fledge about 13 days after hatching, that they might drown in the pond. However, it was thought that the structure of the pond would allow them an easy exit if they were to fall in. There were also concerns as to the behaviour of the second pair towards the chicks but, although the male of the other pair was observed on occasions to chase the fledglings, they were never overly aggressive and the two pairs co-existed peacefully. The second pair actually chose a nest site within a metre of the first pair. Fledglings appeared to show sexual dimorphism with the males having darker markings around the eyes and gradually the male's bill began to brighten and become a similar orange/yellow colour as in adult males.

Once the chicks were independent, both pairs of parents went down to nest again, building new nests in different locations. Both pairs successfully reared two clutches and the first pair actually hatched a third clutch of four chicks. However, soon after hatching all four chicks disappeared. We do not know what happened, but as the nest was unusually built on the ground near the food bowl, it is possible that the adults were disturbed by slugs; these had proved a problem near the bird's food. During the night, this disruption may have led to the chick's death and the parents removing them from the nest. However, there is no real evidence for this.



Eggs and chick just hatched

In summary, four clutches were successfully reared; three clutches of two and one of three, with roughly equal numbers of males to females and all were transferred to other collections at around six months of age. The original two pairs have been kept on at the zoo. So far 2015 has seen a further five chicks fledge successfully. However, subsequent clutches have been lost, possibly due to competition for live food by the older fledglings.

Products:

Both Witte Molen softbill bird foods purchased from Rob Harvey - <http://shop.robharvey.com>

Nutribal purchased from Rob Harvey - <http://shop.robharvey.com>

Wax moth - www.uk-waxworms.co.uk

Mealworms - www.eurorep.co.uk

Yellux - versele-laga.com

Zoomesh

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Hoi, H. and Griggio, M. (2012) Bearded Reedlings Adjust Their Pair-Bond Behaviour in Relation to the Sex and Attractiveness of Unpaired Conspecifics. *PLoS ONE* 7(2): e32806. doi:10.1371/journal.pone.0032806

Robson, C. (2007) Bearded Parrotbill *Panurus biarmicus* in del Hoyo, J., Elliott, A., Sargatal, J., Christie, D.A. & de Juana, E. (eds.) (2014). *Handbook of the Birds of the World Alive*. Lynx Edicions, Barcelona.

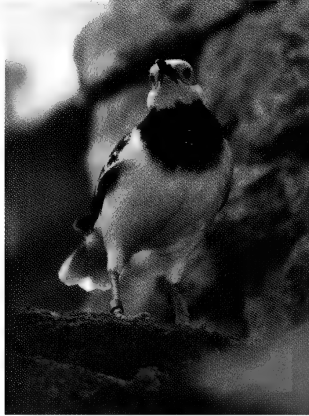
Xeno-canto Foundation. (2005-2014) 65 foreground recordings and 10 background recordings of Bearded Parrotbill *Panurus biarmicus*. (Online). Available: <http://www.xeno-canto.org/species/Panurus-biarmicus?&view=3>

THE INS AND OUTS OF BLACK-COLLARED STARLING

Sturnus nigricollis REPRODUCTION AT DISNEY'S ANIMAL KINGDOM

By Coral Dannelly, Aviary/Trails Keeper (Coral.K.Dannelly@disney.com)

The Black-collared Starling *Sturnus nigricollis* is one of many Asian species showcased at Disney's Animal Kingdom's Asia aviary. These birds have a distinct black and white pattern, as well as a duet call that can be heard throughout the day while walking through the aviary. Larger than a Bali Mynah *Leucopsar rothschildi*, these birds are definitely the busy bodies of the aviary and make quite an impression on the guests as well as the keepers.



Black-collared Starling

The outdoor walk-through aviary measures approximately 135 feet (41m) in length, 65 feet (20m) in width and reaches a maximum height of approximately 35 feet (11m). This area is moderately to heavily planted with a variety of tropical plant species, including multiple *Ficus* species, bamboo *Bambusoideae*, orchid, elm and hibiscus trees. There are two water features in this area, a pond covering roughly eight hundred square feet and reaching a maximum depth of fourteen inches and a circular lotus fountain measuring fifteen feet in diameter and reaching a maximum depth of two inches.

A group of 1.3 parent-reared Black-collared Starlings arrived at Disney's Animal Kingdom in September 2007 from Jardin Zoologique du Quebec. A female in this group died shortly after arrival. In November 2007, 1.2 Black-collared Starlings made their debut in the Asian aviary. Other than Black-collared Starlings this enclosure is inhabited by twenty-six species of birds totalling more than two hundred adult individuals and varying numbers of offspring depending on the time of year. These species include Metallic Starling *Aplonis metallica*, Crested Wood Partridge *Rollulus roulroul*, Argus Pheasant *Argusianus argus*, Indian Pygmy Goose *Nettapus coromandelianus*, Falcated Teal *Anas falcata*, eight pigeon/dove species including Green-winged Dove *Chalcophaps indica*, New Guinea Masked Plover *Vanellus miles* and multiple passerine species such as the White-rumped Shama Thrush *Copsychus malabaricus*, Fairy Bluebird *Irena*

puella, Collared Finch-billed Bulbul *Spizixos semitorques*, Zebra Finch *Poephila guttata* and Hooded Pitta *Pitta sordida*. The diet offered in the Asian aviary consists of soaked Mazuri parrot breeder pellets, soaked Mazuri insectivore pellets, various fruits and vegetables, Mazuri gamebird maintenance pellets, carnivore meat, mealworms, superworms, waxworms, crickets and pinkie mice. The Black-collared Starlings have been observed eating all of the insects listed above, plus carnivore meat, pinkie mice and Mazuri parrot breeder.

Shortly after their debut, a male and female paired off and displayed reproductive behaviour. This behaviour consisted of duet calling, beak slapping and allopreening. Among the species housed in the aviary, minor interspecies aggression was noted between two female Bali Mynahs and the Black-collared Starlings. Intraspecies aggression has primarily been noted during the breeding season, with moderate to severe aggression exhibited toward the non-paired female by the breeding pair of Black-collared Starlings.

In April 2008, the breeding pair began building a nest twenty-five to thirty feet high in the canopy of a ficus tree. The nest was a two feet by two feet dome with an entrance tunnel that was four inches high and one-foot-long consisting primarily of palm fibres, bamboo leaves, Spanish moss and rootlets. The first nest fell out of the tree and contained four blue-green coloured eggs which suffered severe damage. All four eggs were fertile and showed signs of development, but died shortly after being artificially incubated. The pair nested four more times, but each time no eggs were found when keepers checked the nest. Native feral snakes had been documented on video eating eggs and birds in the Asian aviary, which is a very common Florida zoo issue, so it was thought that snakes might be predated the eggs from the Black-collared Starlings. The lone female in the Asian aviary also built a nest during the 2008 breeding season and the breeding pair were observed stealing nesting material from her and the male was seen pulling eggs out of her nest. This female was relocated to an off exhibit area during the 2009 breeding season due to aggression from the established breeding pair.



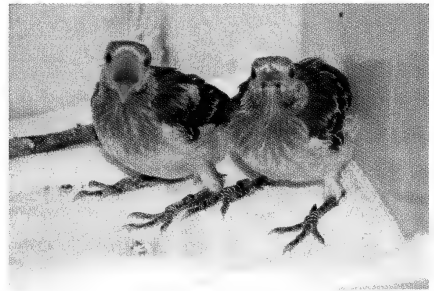
Black-collared Starling nest and eggs

During the 2009 breeding season, the pair nested three times, and during one of the nest checks, a clutch of four blue-green eggs were retrieved and pulled to a Humidaire incubator (99.5 degrees F and wet bulb 85 degrees F humidity) for artificial incubation. Weight loss checks and candling were performed daily and all four eggs showed signs of development. One egg hatched naturally, another one hatched with the assistance of the incubation keeper staff. The other two eggs were determined to be early death embryo (EDE) and late death embryo (LDE) with the chorioallantoic membrane (CAM) developing unevenly. The onset of incubation by the parents could not be determined by behaviour, so the incubation length was approximated to be 15-16 days. Weight loss in the eggs that hatched was between 11-13% with an estimated fresh weight determined.

The two orange-coloured chicks were moved to an Avian Intensive Care Unit (AICU) for hand-rearing. Their diet consisted of soaked Mazuri breeder parrot pellets, pinkie mice, crickets, small mealworms, grapes and papaya. A vitamin B supplement was also given. (Please reference Appendix A for further detail of the hand-rearing protocol.) Wood wool was used as a substrate in their nest cup. The eye slits of these chicks opened on day 6 and feathers were opening over the entire body on day 11. These chicks fledged at 20 days and were eating on their own by day 26. Feather-sexing concluded that these two chicks were males. One of the 2009 offspring was paired up with the unpaired female from the original flock and introduced back into the Asian aviary in November 2009 to join the established breeding pair.



Black-collared chick day 4



Black-collared Starling day 21

Due to continuing snake problems and abandonment of active nests in the Asian aviary, in 2010 and 2011, Black-collared Starling eggs from both females were pulled to incubators for hand-rearing. Throughout 2011, the Asian aviary was snake-proofed with a perimeter fence, door guards and electric wire. These precautions have helped diminish the snake problem and many successful hatches from other species in the Asian aviary have fledged since.

In 2012, it was a goal of the keeper team to have the Black-collared Starlings successfully parent-rear and fledge their own chicks. One change to protocol was that their meat diet was chopped into small pieces and offered in the aviary throughout the day, as opposed to whole pinkie mice being offered in our trap cages 5 times a day. Keepers felt that this change would be beneficial due to the Black-collared Starlings not coming to the trap cages on a consistent basis and were probably trying to find food on their own in the aviary. Also, supplemental bug feeds

were performed early in the morning and late in evening in addition to two normally scheduled bug feeds performed during the day. With the efforts of everyone on the keeper team, one breeding pair fledged 2.0 Black-collared Starlings, making the 2012 breeding season a success.

Since their arrival in 2007, the Black-collared Starlings have been a fascinating, fun and challenging species for the keeper team to work with. Each challenge these birds have presented has been an opportunity for us to learn. Future breeding seasons bring potential opportunities for skill development and with teamwork will bring more success. Although we started with a very limited gene pool, as there are no others in the United States, we have managed to increase the population and transfer birds to the San Diego Zoo and Zoo Miami. As these large starlings are one of the few that do well in a mixed species aviary, we hope to acquire a few more in the future to ensure a sustainable population for future generations to enjoy.

Appendix A. Disney's Animal Kingdom Black-collared Starling hand-rearing protocol

Common name: Black-collared Starling *Sturnus nigricollis*

Adult body weight: 150 – 170g. **Adult Diet:** parrot pellets, fruit mix, insectivore, pinkie and meat.

Special Notes: Cambro refers to a 2 qt Cambro food container; 1 drop of undiluted vitamin B supplement (Quicko V) per 5 g of body weight once per day. Example: 0-5g = 1 drop/day; 6-10g = 2 drops/day; 11-15g = 3 drops/day and so on. Depending on palatability of the supplement, drops can be given all at one feed or spread out over several feedings.

Information in this protocol is meant to be a guide and can and should be changed BASED ON THE CHICK'S BEHAVIOUR.

Day	Brooder/Temperature	Frequency	Diet	Intake	Misc
1	95° F (35°C) in AICU Humidity = 40-50% Cambro filled with water and wet towel on bottom of brooder used to increase humidity Nest should be somewhat flat, made of wood wool (not cup nesters). Decrease temperature 1° every 2 days.	Every 2 hrs. 7x per day	Chopped pinkies, Mazuri parrot breeder soaked in water (about 1:2 ratio), wax worm pieces. Dip all in Pedialyte	Ad lib (App. 40-60%)	Only capable of holding head up for brief periods. Most of time spent in embryonic position.
2	96° F			Ad lib (App. 70-90%)	Stronger, holding head up during feedings, able to stand briefly.
3	95° F				Feather tracts visible, lateral, crural, scapular. Standing strongly during feeding.
4	95° F		Add small mealworms and cricket abdomens dipped in Pedialyte.	Adjust intake to meet chick's needs.	Eye slits appearing. Primaries, secondaries, and wing coverts erupting. Feather tracts visible on back and wings.
5	94° F				
6	93° F Watch temp and adjust down as needed				Eye slits beginning to open.
7	92° F				
8	91° F	Every 3 hrs 5x per day			Eyes fully opened.

Day	Brooder/Temperature	Frequency	Diet	Intake	Misc
9	90° F		Add small soft fruits-peeled grapes, papaya		Upper wing coverts and crural coverts beginning to emerge from sheaths.
10	90° F Discontinue wet towels.			Ad lib (App. 60-80%)	
11	89° F		Replace pedialyte with distilled water		
12	89° F Removed cambro filled with water. Move to cambro for nest.	Every 4 hrs 4x per day			
13	88° F			Ad lib (App. 30-50%)	
14	88° F		Increase fruit and mealworms and pellets pinky:pellets:other in 1:2:1 ratio Discontinue Vit. B. supplement		Leaving nest.
15	88° F				
16	87° F		Stopped distilled water.		May begin hopping out of nest but not ready to fledge yet.
17	86° F				
18	85° F				Given free run of AICU, would not stay in nest.
19	84° F	3x per day			
20	83° F				Earliest expected fledging.
21	83° F Weight only taken in morning				Move to stack/howdy cage when chicks are perching comfortably.

HAND-REARING THE CUTTHROAT FINCH *Amadina fasiata* AT PAIGNTON ZOO, UK

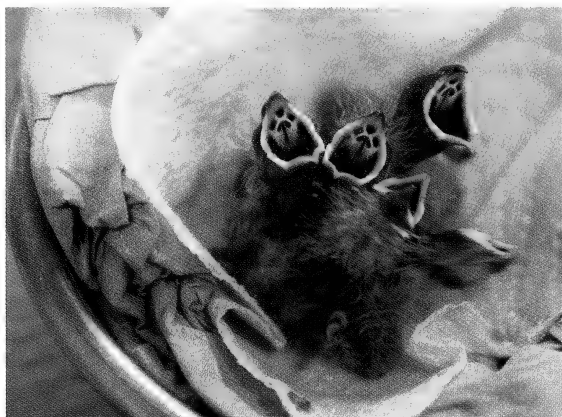
By Jo Gregson: Curator of Birds and Tom Tooley: Senior Bird Keeper

<http://www.paigntonzoo.org.uk/>

There are three sub species of African Cutthroat Finch, the bird we are most familiar with in captivity is *Amadina fasiata*. They are found in Savannah and open grassland type habitats from Senegal across middle Africa to Uganda. Cutthroats are seedeaters of the family *Estrildidae*. There are around 134 species in the *Estrildidae* and most hold a status of least concern. In some dry areas Cutthroats are on the increase.

Cutthroats are often bred in small numbers by private aviculturists, although in the past, most birds available have been those imported from the wild. These days they are not as easy to acquire and they demand a high price.

The incubation period is thirteen days. Chicks fledge at twenty-five to thirty days. Males develop a red-coloured throat just before fledging, which shows as the first cheek feathers erupt. The nest is a ball of grass in a bush or tree; five eggs are laid and incubated by both parents; in captivity Cutthroats readily use nesting boxes. Like many of the *Estrildid* finches the Cutthroat chicks have a strikingly patterned gape.



Cutthroats chicks (photo by Ray Wiltshire)

Paignton Zoo has held a large group of Cutthroats for more than ten years: in good years the flock has numbered up to 150 birds. The birds are housed in a desert display within a large greenhouse. It has always been difficult to form a second group in smaller enclosures, where they would become overstressed after having comparative freedom. It was decided that we should take eggs at a time when pairs usually fail to rear their chicks during the early part of the year. We aimed to hand-rear birds to be released back into the desert house and also to build a second group.

Plans were made to try two methods – method one was to take eggs and to hatch and hand-rear the chicks from day one. The second plan was to harvest chicks at four days of age and to finish the rearing by hand.

Some young chicks of four days were removed as the first trial. The chicks were cold on removal as we would expect during the winter months. One chick weighed 3.64 grams: it responded well to artificial rearing and put on 10 % of its weight each day. Eyes began to open on day nine when the weight was 9.26 grams. Feeding began at hourly intervals and gradually stretched out to two hours from 7.00 am to 7.00 pm. The trial worked very well: even so it was thought that removing eggs would be the most productive choice because it eliminated the chance of losing very young chicks to unsuccessful parenting by the adult birds.

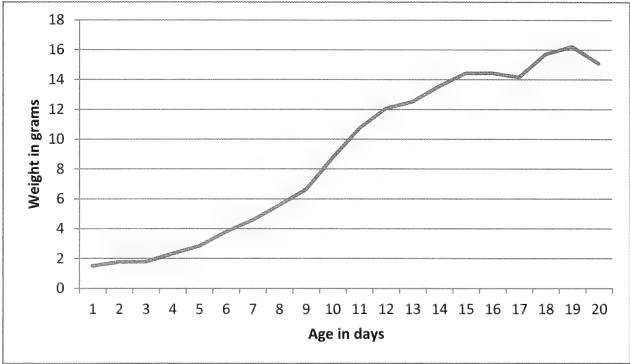
Eggs were incubated at 37.5 degrees C. Once hatched chicks were maintained in the hatcher at that temperature for four days before being moved on to a brooder set at 36.5 degrees C. The small size of the chicks meant that they could not maintain their own temperature even for short periods of time until they were several days of age.

The temperature was reduced gradually to 28 degrees C by day eighteen and they had been moved to a larger cooler brooder. At this time, they were offered millet sprays. Within a few days they were freely cracking the seeds. By the time the chicks were twenty-five days old they were placed in a canary breeding cage for several hours each day. For the first few days they were returned to the brooder at night.

Their diet consisted of Kaytee Exact rearing formula. One part Kaytee was mixed with four parts water, fed every hour from 6.00 am until 9.00 pm. The amount of Kaytee was raised to two parts with four parts water from day four to seven.

Over the following week the mixture was thickened by adding ground millet flakes. Flakes were added in small amounts until the diet was one-part millet to two parts Kaytee and three parts water. Formula feeding was gradually reduced until 34 days when total weaning was achieved.

Days	Grams
1	1.52
2	1.78
3	1.79
4	2.34
5	2.85
6	3.8
7	4.58
8	5.59
9	6.63
10	8.76
11	10.74
12	12.08
13	12.53
14	13.57
15	14.45
16	14.45
17	14.17
18	15.72
19	16.23
20	15.1



Graph to show the growth rate of Cuttbroat Finches in the first 20 days of life

Cutthroats were faster to wean than we expected - when compared to the Java Sparrow *Lonchura oryzivora* weaning at 46 days. In fact, Cutthroats gained weight much faster than Java Sparrows being reared alongside them on the same diet and care. The Cutthroat weight graphs show a drop in weight between fifteen and seventeen days which is when the chicks begin to fledge out of their rearing bowl.

Supplements were offered once the birds began to wean: they were offered lettuce dusted with Calicare a vitamin/mineral supplement and cuttlefish was offered whole.

Compared to birds collected at five days old the newly hatched birds were more difficult to handle and weighed as little as 1.40 grams. They became chilled very easily and for this reason they were kept in the incubator for a few days after hatching. The older birds were much less trouble to rear; as they were bigger they could take more food at each feeding, enabling us to cut down the number of feeds per day. If only a few birds were needed each year to supplement the flock, we would harvest chicks up to 5 days old. If the main flock numbers were to begin to crash, then egg harvesting would be the quickest way to raise numbers again.

THE SOCIETY'S FRENCH TOUR 2014

By Chris Brack

On a hot sunny Friday in September 2014 the group met once again (having been here in 2005) in the beautiful gardens of Le Jardin des Plantes. We were met at the entrance to the Menagerie by our vice president Dr Quinque, accompanied by Madame Quinque, also the Director of Le Menagerie, Dr Michel Saint-Jalme.

Since our last visit, a desert aviary has been one of two major developments in the zoo. A donation from the National Avian Research Centre, Abu Dhabi, UAE has made this possible. We saw 3.5 Asian Houbara Bustards *Chlamydotis macqueenii*, the only ones in Europe. Michel himself has been involved with bustard reproduction for many years in the Middle East since the nineties and before becoming the director of the menagerie. Also represented were 2.2 Little Bustards *Tetrax tetrax*, they had hatched two chicks in 2014 which unfortunately did not survive. The two female Kagu *Rhinochaetos jubatus* that we viewed on our previous visit were no longer in the new pheasantry (built in 1881!) both, of course, were on loan from our Vice President, as the menagerie has had a long tradition with the Kagu. Unfortunately one bird has died and the other was subsequently returned to Les Mesnil. The Wuppertal zoo would have been interested in exchanging one of its males for one of these females! The great aviary was built by Aphonse Milne-Edwards in 1888 and his staff, all 'in-house' work due to a shortfall in his budget, Michel told us that there was no difference in the budgeting today, with wages still being comparatively low for the staff. Most of his staff live at least one or two hours' distance from the city centre, again nothing changes there! After leaving the zoo in late afternoon with sunburnt heads, we were treated to a real professional bus driver's experience. He showed us the historical streets around the gardens with an excellent commentary; Rue Buffon, Rue Cuvier and others which were not built for present day traffic and long coaches!



Kagu Rhinochaetos jubatus

The next morning was spent wandering around the grounds of the beautiful Royal Château de Fontainebleau which Steve, our reliable coach driver, suddenly arranged with the accompanying lovely weather! In the afternoon we arrived at the highlight of our tour, our Vice President's garden. We were taken around in three groups: we saw ten St. Vincent Amazons *Amazona guildingii*, his initial stock being four birds. The first successful breeding was in 2005. Paradise Park, Cornwall has a bird on breeding loan. There were also two Marajo Yellow-headed Amazons *Amazona ochrocephala xantholaema*, ten Golden Conures *Guaruba guarouba*, two Palm Cockatoo *Probosciger aterrimus* which were hand reared in 2014. The group of Ouvean Horned Parakeet *Eunymphicus c uvaensis* died out ten years ago! Roland Wirth of ZGAP thinks it is one of the few collections in captivity without a hybrid possibility, having received offspring from here! One female Great Blue Turaco *Corythaeola cristata* was left, 13 having been bred in the past. Dr Quinque told us he had bred his African Pygmy Geese *Nettapus auritus* for the first time 30 years ago. His last Red Uakari *Cacajao calvus rubicundus* "Ruby" a bizarre primate from South America which we saw on the 2005 trip died in 2013, Los Angeles Zoo had shown an interest in this individual, the only offspring of the pair he imported himself from Peru after World War II. Of course, the highlight of the avian tour was the 16 enclosures for Kagu scattered around his garden with 32 birds paired up. The oldest captive bred birds are 14/15 years old and still alive. In 2012/2013 48 birds were in the collection: in that year ten eggs from three enclosures were laid and two chicks were reared. In 2014 no chicks had been reared. Dr Quinque has promised at least one female for Wuppertal if they breed successfully in 2015! His female Blyth's Hornbill *Aceros plicatus* had died and Geoff Masson was going to look for a replacement, as he had in the past bred this species. After all this thirst inducing walking, he showed us a DVD in his 'association hut': it had been produced by French television and featured his work with various rare species over the years. He produced a copy of his autobiography (unfortunately only in French) for the library of the Avicultural Society. After this we enjoyed many glasses of delicious Loire Valley wine served by Madame Quinque accompanied by very tasty finger food, all of which prepared us for a long journey into Normandy.



St. Vincent Amazons Amazona guildingii

The next day we arrived at Parc de Clères, the former home of Jean Delacour, in a beautiful village. Within the splendid grounds we gained an insight into the former historical importance of the collection. The fast flowing crystal clear water for the waterfowl ponds was very evident. It has to be said though, as at the Wildfowl & Wetlands Trust collections in the UK, the decline in the number of species was disappointing. One of the newer exhibits was of Lac Alaotra Bamboo *Lemur Hapalemur alaotrensis* with their offspring. Also, nicely integrated in the 'endangered family exhibit' were the Madagascar Teal *Anas bernieri*, their breeding now being controlled, and Meller's Duck *Anas melleri*, a species first exhibited in 1930s by Delacour in Clères. Among the pheasant species, the Vietnamese Pheasant *Lophura hatinhensis*, Crestless Fireback *Lophura erythrophthalma* and Salvadori's Pheasant *Lophura inornata* were all in good condition. A zoological highlight was seeing four subspecies of Silver Pheasant which could be viewed alongside one another: *Lophura nycthemera berlioz*, *lewisii*, *beaulieu* and *engelbachii*. The last evening was spent in the birthplace of Jules Verne at Amiens. As our hotel was unable to offer seating or food for our group we decided to look around for alternative eating in this unremarkable town and to our delight, Mike Curzon found a fantastic fish restaurant, and we dined in true French style. William and myself were more than happy with this choice!

Parc Zoologique d'Amiens Métropole is a municipal Zoological Garden of seven hectares, it is 62 years old and it was a pleasant surprise to find a nicely laid out zoo, reminiscent of Chester Zoo with its flowering borders. The largest mammals exhibited were two female Asian elephants *Elephas maximus*, both on loan from German Zoos. They said that they had ambitions to keep bull elephants. Just 65 species are kept, and among the noteworthy breedings were Wreathed Hornbills *Rhyticeros undulatus*, two females were reared in 2010 and again in 2012 another chick. The parents were from Amsterdam/ Rotterdam and arriving in 2001. As it rained continually, our guided tour from an English-speaking biologist was welcomed by all.

After the morning tour the group left in their coach for the ferry crossing in the afternoon, Ulrike and I departed from the group to return to Paris, after a wonderful but exhausting trip.

NEWS FROM LORO PARQUE FUNDACIÓN, MARCH 2016

By Dr. Juan Cornejo, Bird Curator, Loro Parque Fundación, Tenerife

The breeding season is well under way at Loro Parque. Most of the Lories, *Psittacula*, *Brotogeris* and *Eclactus* have already laid eggs and the first chicks have hatched in some species. Other species such, as *Cacatua*, *Amazona* and *Pyrrhura*, have start laying but haven't yet reached their peak breeding activity.

Our visitors can observe the first chicks of this year in the rearing house. Among others of note are four young Blue-bellied Parrots *Triclaria malachitacea* which are being reared from the egg, a species traditionally difficult to hand-rear. We are happy to report that the Pesquet's Parrots *Psitrichas fulgidus* are doing well. We are rearing six chicks and another is being reared in the nest by its parents.

The chicks of the Kea *Nestor notabilis* pairs that laid eggs in January are now in the rearing house. There are four chicks in total, growing very rapidly. This species has thick long white down from the time of hatching that protects them from the low temperatures in their natural habitat. Due to this characteristic, during artificial rearing it is necessary to keep the chicks at a lower temperature than any other parrot, otherwise they would overheat.



Kea chicks aged 3 weeks

Another striking characteristic of these chicks is the presence of bulky yellow fleshy parts on both corners of the beak. These fleshy parts are unique to this species and give them a distinctive appearance. The chicks hatch with them and they grow at the same rate as the rest of the body and do not disappear until they start feeding for themselves. The function is unknown but I have a theory: the Kea's long upper beak is an adaptation to unearth roots and tubers, but when they feed a young chick, they cannot engage with it in the same way as other parrots do. Last year we placed a video camera inside one of the Kea's nests and could watch at first hand the complete natural breeding process. While the chicks were in the nest, they were fed exclusively by the female and she did it by placing the beak in a way that the upper part fits with the fleshy part of the chick. Apparently, this peculiar structure of the chicks may help to support the beak of the female, making feeding easier and protecting the chick's head from her sharp beak.



Kea chick aged five days

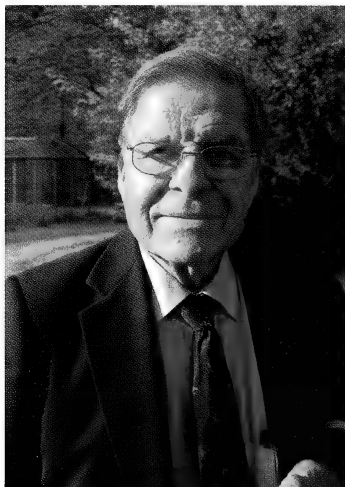


Kea chick aged eight weeks. The fleshy parts on both sides of the beak are still visible

I had the opportunity at the end of the month to visit the Czech Republic to give a presentation at the annual National Convention of Aviculture. The convention was very interesting and involved more than 150 participants from seven countries. I was glad to see the number of young participants, which is something encouraging compared to other countries where the average age at these events is constantly increasing. I also had the opportunity to visit some private collections, all of them of high quality, as well as the Prague Zoo. I had been looking for the opportunity to get to know the private parrot collections of this country for a long time, and thus I am very grateful for the invitation of the Czech Association of Exotic Bird Breeders (ACHEP), and to Lubomir Tomiska, Jan Sojka and Zdenek Vandelik for being my hosts, as well as to all breeders who opened the doors of their facilities so that I could visit them and we could share experiences.

JAN LOUWMAN, A DIAMOND MEMBER OF THE AVICULTURAL SOCIETY

By Philip White MBE



Jan Louwman

In 1954 the Diamond Jubilee of the Avicultural Society was held at the Rembrandt Hotel in London and a young Jan Louwman came to join his mother who was attending. Following the recent death of Raymond Sawyer, Jan is thought to be the last surviving member of the Avicultural Society to have attended that auspicious event.

Born in 1935 in Wassenaar in the province of South Holland at about the same time as his parents opened their zoo in 1937, Jan joined the Avicultural Society for their study trip to the Netherlands in September 2015 and, whilst at Vogelpark Avifauna, I took the opportunity to interview him and hear a little of his extraordinary, lifetime contribution to wildlife conservation.

In 1928 Jan's father had started importing cars from the USA and was appointed sole distributor for Dodge and Chrysler vehicles. Nearly ninety years later the family remains in the same business and is the appointed importer and distributor for both Toyota and Suzuki cars with Jan's son, who trained at the London Business School, now a director of the family company. But Jan was more interested in the zoo, which had grown out of a private bird collection begun by his parents in 1930, than in importing cars. The zoo was not originally intended to become a visitor attraction and was only opened to the public in order to help defray its running costs, the unintended addition. The unintended addition of a circus elephant and two bears being the forerunners of what later became a diverse collection with a renowned wildlife breeding centre.

In the early years, tigers and lions were often brought into the family home to be bottle fed and it was a surprise to the young Jan to discover that other children didn't also have big cats in their house! The family travelled regularly to America on business making the 7 to 8 day crossing by ship. But, as it became more dangerous in the lead up to the Second World War, Jan's father decided they should stay in the US. This they did from 1939 -1946 when the Louwmans took up residence in New York where Jan went to school and where he learnt his excellent English. Even though the population was starving the Germans ensured that the zoo animals continued to be fed and the zoo was kept going until 1942. On September 8th 1944 the Germans launched the first V2 rocket attacks on London from Wassenaar causing the RAF to bomb the playground of the zoo as they thought it part of the rocket installation.

The book 'Wassenaar in Oorlogstijd' [Wassenaar at War] contains pictures of the cellar under the lion enclosure which was used as a temporary safe hiding place to shelter Dutch Jews and one unlikely to be too closely investigated by the occupying Germans.

After returning to school in Holland in 1946 Jan helped at the zoo in his school holidays and then stayed on after he left school. It was here that he met Hanneke, his future wife, who at weekends was also working at the zoo and they married in 1964. Jan was by now director of the zoo and continued in this role until 1980 when the zoo, which by now needed a lot of capital investment, was sold to the local province.

Sadly, after only two years, the zoo was closed, but the Louwmans bought back the older animals to ensure that they were properly homed and did not end up with an international animal dealer. The zoo already had a behind-the-scenes breeding centre which the Louwmans had retained when the zoo had been sold and which they now decided to develop.

Under their management the Wassenaar Wildlife Breeding Centre proved to be very successful, and particularly with cheetahs which are known to be difficult to breed. The Louwmans were able to achieve an 85% cub survival rate and over 215, parent-reared cheetahs were raised over a thirty year period from 60 litters; a remarkable accomplishment.

The Louwmans were also successful in breeding both the European Black Vulture *Aegypius monachus* and Lammergeier *Gypaetus barbatus*. By the early 1980s there was only one pair of breeding Black Vultures on Mallorca and in 1983 a conservation project was started which, in 1986, led to the creation of the Black Vulture Conservation Foundation based at Wassenaar of which Jan was a founder member. Although still highly threatened, there are now some 130 Black Vultures on Mallorca including 25 breeding pairs.

In 1913 the last Lammergeier or Bearded Vulture was shot in the Swiss Alps, but 1985 saw the first introduction in the Alps in Austria of three birds including one from the Wassenaar Wildlife Breeding Centre.

Jan was also a founder member of the Foundation for the Conservation of the Bearded Vulture

which, since 1986, has overseen the introduction of more than 150 birds into the wild in Switzerland, France, Italy and Austria. The original stock, which was from Russia, was the same species, i.e. not a sub species, as the European birds. The result of a co-ordinated breeding programme by European zoos, the birds in the wild have now bred to the third generation and the success of the project changed the attitude of conservationists who had initially thought the birds would remain zoo animals. Introductions ceased in 2008 when the original goal of establishing a self-sufficient population of Bearded Vultures in the Alps was considered to have been reached. However, the population remains at considerable risk, mostly as a result of poisoning.

The breeding of cheetahs and vultures finished in around 2009, but the breeding centre, although now wound down, still exists.

At a presentation by the mayor in 2013 in the auditorium of the Louwman car museum in The Hague to mark the thirtieth anniversary of the Wassenaar Wildlife Breeding Centre, Jan's considerable contribution to wildlife conservation was recognised when he was honoured with a Knighthood of the Order of Orange-Nassau.

Jan Louwmans is clearly held in high regard by fellow conservationists and during our talk both the director and the owner of Vogelpark Avifauna made a point of coming over to talk to him and shake his hand. In retirement Jan continues to be involved in the automobile museum as well as being kept active by his two children and five grandchildren.

NEWS & VIEWS

CRITICALLY ENDANGERED PARROTS KILLED BY RATS AT BREEDING FACILITY

Captive breeding efforts to save the Critically Endangered Orange-bellied Parrot *Neophema chrysogaster* - Australia's rarest bird with perhaps as few as 50 individuals in the wild - have suffered a major setback.

Fourteen Orange-bellied Parrots were killed by rats during late 2015 at the Taroona (Hobart) captive-breeding facility. The affected birds were being held separately in quarantine from the main breeding stock, as they were suffering from Psittacine Beak and Feather Disease (PBFD). Following the killing of two parrots during October and November, in early December a more serious incident led to the death of the remaining birds. (In May 2013 two Orange-bellied Parrots in the same facility were killed by a cat that breached the perimeter fence).

The Orange-bellied Parrot is a small, attractive ground-feeding parrot, slightly larger than a Budgerigar *Melopsittacus undulatus*, with rich-green plumage and a small patch of orange on its belly that gives it its name.

The parrot is known to breed at just one site, Melaleuca in the south-west of Tasmania, before migrating to the Australian mainland to winter on saltmarshes in Victoria and South Australia (historically, the species has also been recorded from New South Wales).

To try and mitigate these declines there is a well-established captive-breeding programme, with just over 200 Orange-bellied Parrots held at various facilities on Tasmania and the mainland as of July 2012. The aim is to grow this to at least 350 birds by 2016–17.

More-promising news has recently come from the wild population at Melaleuca, where 21 birds had returned by the end of October 2015, including two birds ringed as fledglings at the site in 2014 – indicating that they had successfully undertaken their arduous migration for the first time.



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HOPE FOR ALBATROSS SPECIES

In 2004, 19 of the world's 22 species of albatross were listed as either critically endangered, endangered or vulnerable but thanks to the excellent work done by groups such as the Albatross Task Force, this has been reduced to 15 species now listed. The main cause for decline has been long-line fishing where baited hooks are streamed out from the backs of boats only for the baited hooks to be taken by the albatross. Different tactics are now employed including the placing of bright plastic streamers that flutter from the stern as the hooks are lowered and disappear beneath the waves to depths the birds can't reach. This is proving to be a very effective conservation measure.

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COMMON CRANE *Grus grus* RELEASE PROGRAMME UPDATE

2015 has seen an incredible 16 pairs form and hold territories, many in the Somerset Levels and Moors, but others in South Wales, Wiltshire, Gloucestershire, Oxfordshire and East Somerset. Nine of these pairs are known to have made breeding attempts (build nests/incubate eggs) with 4 of these going on to hatch and raise chicks, that is 44% of the breeding pairs. Three of these four pairs have gone on to raise a chick or chicks to fledging - Alexander (a 2012 male) & Swampy (a 2011 female) on Kingsmoor in Somerset; Minnie (a 2010 male) and Wendy (a 2010 female) on the WWT Reserve at Slimbridge; and Midnight (a 2012 male) and Gemma (a 2010 female) on private land in Wiltshire. These are the first pairs of released birds to successfully raise young to fledging.

These are excellent results, particularly when you consider that many of these are first time pairs, with no experience, and they are learning all the time. There has been an upward trend in success of pairs that have made attempts in previous years: they may just incubate for a few days in the first year before losing their eggs, the next year they incubate for longer or get the eggs to hatch, but lose their chicks.

The project aims to establish around 20 breeding pairs in the South West by 2025.

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**RECORD-BREAKING WINTERING NUMBERS OF SPOON-BILLED SANDPIPERS
Calidris pygmaea IN CHINA**

Record numbers of Spoon-billed Sandpiper, a Critically Endangered shorebird, have been discovered wintering in China, says conservationists from the Hong Kong Bird Watching Society. On 30 December 2015, HKBWS volunteers Jonathan Martinez and John Allcock found at least 30 Spoon-billed Sandpipers near the Fucheng Estuary in south-west Guangdong Province, some of this land is located within the Zhanjiang Mangrove National Nature Reserve. This was the highest number ever found in China during winter, but the record did not even last a month

At the end of January further coordinated counts in Guangdong Province took place, including members from the Zhanjiang Bird Watching Society and staff from the Zhanjiang Mangrove National Nature Reserve Management Bureau. Together they counted at least 45 individuals from four locations, with Fucheng Estuary having the highest count (38 individuals).

Jonathan Martinez, commented: ‘These numbers are a massive increase on just three individuals counted at Fucheng during our inaugural mid-winter survey in 2012. That year, we found long lines of mist-nets flanking shorebird roost sites. We counted hundreds of dead birds, and literally thousands of nets’.

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RECORD NUMBERS OF BLACK-FACED SPOONBILL *Platalea minor*

The annual International Black-faced Spoonbill Census recorded 3,356 individuals in January 2016, an increase of 2.6% from the last year’s 3,272 individuals, and a record recent count for this Endangered Asian waterbird despite a deterioration in habitat. An annual census of Black-faced Spoonbill has been ongoing since 2003. This year’s census was held on 15-17 January, with the participation of over 200 volunteers. The survey covered locations in South Korea, Japan, mainland China, Taiwan, Hong Kong, Macau, Vietnam, the Philippines and Thailand.

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CRESTED PIGEON *Ocyphaps lophotes*

It is good to see that after many years with a low population in captivity in the UK, the Crested Pigeon *Ocyphaps lophotes* is now being seen and bred in more and more collections. This species was once thought to be a specialist of the drier regions in its homeland of Australia but, according to recent reports, has increased its distribution of the 1850s to being common throughout most of the mainland.

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MELANISTIC GREATER FLAMINGO

Birdwatchers on the on the Mediterranean island of Cyprus were rewarded with an unusual view of a black Greater Flamingo *Phoenicopterus roseus* amongst the thousands of birds at the Akrotiri Environmental Centre. It was spotted during a bird count. This is probably the same bird seen previously in Israel in 2014. This is believed to be the first time melanism has been observed in this group of birds. The bird’s inky feathers are a result of melanism, a genetic condition that produces too much of the pigment “melanin,” turning those otherwise pink plumes black during development. The opposite of melanism is albinism, when no melanin is made and the animal is colourless apart from a faint hue in the eyes (from red blood vessels). When several types of pigment are partially missing, the result is a patchy coloration known as leucism, a few white feathers here, a bleached splotch there. Other strange cases of all-black feathers have been observed in birds from owls to woodpeckers to herons.



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